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DEMOGRAPHIC FACTORS ASSOCIATED WITH PROBLEMATIC INTERNET USE AMONG TURKISH UNIVERSITY STUDENTS

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Abstract
This study aims to examine the relationship between problematic internet usage and some demographic features among university students. Data was gathered from 342 female (63 %), 200 male (37 %), in total 542 university students. The Online Cognitive Scale (OCS) and Demographic Information Form were used for collecting the data. The time of connecting to internet was mostly at evening and the average of connection time was 0-9 hours per week. There were differences between the means of social comfort, loneliness/depression, diminished impulse control and distraction subscales of OCS according to gender and the age of onset of connecting to internet. Also, a high correlation coefficient was found between the frequency of internet use and the OCS. Females and males differed significantly in their use of internet as regards to the reasons. Internet usage changed according to the subjective evaluation of academic performance of students.

Keywords: Internet addiction, problematic internet use, internet.

INTRODUCTION

Internet continues its rapid growth all over the world. It offers an enormous data base and a great number of web pages with a wide scope of information from many resources. Many people use the Internet without having negative consequences. It is used for communication, information gathering, academic search, and entertainment. As internet access has become widespread, so have reports of its misuse. Some people becoming preoccupied with the internet, are unable to control their use and this causes some problems in their lives. Excessive or inappropriate use of the internet has been the matter of increasing attention in the literature (Lu, Wang, & Huang, 2010; Ni, Yan, Chen, & Liu, 2009; Young, 2012).

Although, the earliest reports about the phenomenon of excessive use of computer dated back to the 1970s, it was not until early 1990s that reports began to appear in the medical and psychological literature. Ivan Goldberg with a joke first proposed in 1995 that Internet addiction may be considered a disorder, and since that time many researchers used the term "internet addiction disorder" (Tao, Huang, Wang, Zhang, & Lie, 2010). Young (1998) suggested a set of criteria for diagnosing this problem based on DSM-IV criteria for pathological gambling. She proposed that internet addiction is very similar to pathological gambling which is addictive in nature (Young, 2004). Because researchers have not come to any agreement on terminology, a variety of terms has been used to describe this behavior (Chakraborty, Basu, & Kumar, 2010; Karim & Chaudhrie, 2012; Yellowless & Marks, 2007). Some investigators have linked internet addiction to addictive disorders, alongside alcohol and drug use disorders. Others have linked internet addiction to obsessive-compulsive disorders or to the impulse control disorders (Shaw & Black, 2008). Thus, for example, in the case of addiction to the internet, "internet addiction" (IA), "internet addiction disorder" (IAD), "pathological internet use" (PIU), "unregulated internet usage" and "excessive internet use "are a few terms used in the earlier literature (Carbonel, Guardiola, Beranuy, & Belles, 2009; Weinstein & Lejoyeux, 2010).

Internet addiction appears to be a relatively common behavioral addiction, the prevalence of which has been estimated to range from 1% to approximately 14% (Tao et al., 2010). In Europe, the prevalence has been reported to range between 1% - 9%. (Cristakis, Jelenchick, Myaing, & Zhou, 2011). Looking at the results of research findings on its prevalence rate, internet addiction ranges

between 2.4 % to 6.44% in Chinese adolescent (Cao & Su, 2006; Ni et al., 2009; Weinstein et al.,2010), 8.2% among Greek adolescents (Siomos, Dafoli, Braimioti, Mouzas, & Angelepoulos, 2008), less than 2% among Finnish adolescents(Heino, Lintonen, & Rimpela, 2004), between 5.1 - 11.6% among Turkish high school students (Canan, Ataoglu, Nichols, Yıldırım, & Ozturk, 2010; Kelleci & İnal, 2010), 4.6% among Australian university students (Thomas & Martin, 2010) and 2.9 – 6.3 % among Korean high school students (Jang, Hwang, & Choi, 2008), it varies from 3.8% to 30% among Iranian students (Alavi, Alaghemandan, Maracy, & Jannatifard, 2012; Ghassemzadeh, Shahraray, & Moradi, 2008). There is currently an increase in computer use and they have access to internet in flexible time schedules. University students use the internet very frequently for various purposes, such as preparing assignments, searching information, communicating with others, and having fun. In particular, people spend more time online and the quality of their social and individual life, as well as their academic or working careers (Ferraro, Caci, D' amico, & Blasi, 2007).

A number of differences have been found to exist between those who use the internet in a healthy way and those who do not. Pathological users would be more likely than others to use the internet for more reasons overall and to use the internet recreationally (relaxing, gambling, playing games, wasting time, using adult-only resources) socially with no-real-life contacts (meeting new people, talking to others with the same interests), and for emotional support (Morahan –Martin & Schumacher, 2000).

Internet addiction is dealing with underlying psychological mechanism like problematic relationships, existential or identity crises, anxiety, academic difficulties or work problems. Online activities help the person avoid disturbing thoughts and negative feelings. Many research findings show that young users are more at-risk subjects for internet addiction than adults. Internet use is the highest in the 16–24 age groups, and early exposure to the internet increases the risk of problematic internet use (Kandell, 1998; Öztürk, Odabasıoglu, Eraslan, Genç, & Kalyoncu, 2007). It is the critical time of social and emotional development. When problematic internet use rises, academic self-efficacy declines. Drinking, dissatisfaction with family, and experience of recent stressful event are potential risk factors leading young people to internet addiction (Lam, Peng, Mai, & Jing, 2009; Odacı, 2011). Certain factors such as use habits, newsgroup, e-mail services, game playing, chatting, and demographics are predictors of internet dependence.

Some studies suggest that there are several differences between boys and girls in terms of the risk of internet addiction. Female adolescents typically use online networking for enhancing communication and sharing information via instant messaging, chatting, and visiting personal websites. However, male adolescents mainly use online networking for playing online games. Internet addiction appears to have male preponderance (Hyun, Han, Lee, Kang, Chung & Renshaw, 2015; Siomos et al., 2008). Tutgun, Deniz, & Moon (2011), compared the problematic internet use of Turkish university students with South Korean university students. Turkish university students reported that they spend more time for chatting and meeting with new people than South Korean counterparts. The fact that male students in Turkey tend to use internet at problematic levels more in comparison with females may be the result of the excessive times they spent in internet with the purposes of chatting and meeting with new people. Ceyhan's (2011) findings revealed that Turkish university students' levels of problematic internet use differed significantly with respect to their basic internet use purposes. The results showed, in terms of the basic internet use purpose, that the problematic internet use levels of university students who " use the internet for entertainment purposes" and of those who " use the internet to establish social relationships with unfamiliar people" were significantly higher than that of those who "use internet to obtain information". He claimed that the use of internet for entertainment and social interaction constitutes an important risk factor for the emergence of the problematic internet use symptoms.

Many researchers reported that both internet usage time and the internet hourly usage , indeed, are important signs of problematic internet usage (Ferraro et al.,2007). They found that people spending a high amount of time online (11 hours and above per week) obtain higher internet addiction scores.

In addition, their results put forth that nightly chatters are more at risk than daily chatters for developing internet addiction disorder. They say nightly users are more at-risk subject for developing an internet addiction disorder, diminishing their individual living quality and disabling their time control.

Internet is an immensely important technological, social and communication tool, and it is changing our daily lives. Predictably, it should be associated with different kinds of human responses which are positive as well as negative ones. Beard (2005) comments that mental health professionals need to be aware of the growing problem, commonly called "internet addiction," and the role that we can take in addressing problematic internet use and abuse. Difficulties with this new technology should be examined in a proactive manner instead of waiting for the crisis to occur and then "picking up the pieces." Introducing new technology and simultaneously using psychology to counteract negative effects may lessen the onset of difficulties and the development of crises. The effective strategies for preventing internet addiction of young population are related to the risk focused approach, which requires the recognition of the factors concerning addiction. The risk focused approach to internet addiction needs the identification of factors to develop appropriate preventive interventions for persons at the risk of internet addiction.

In view of the explanations made above and the earlier literature concerning internet use, this aimed to examine the relationships between problematic internet use, and some demographic features of online experiences of Turkish university students. Thus, the development of preventive interventions can be specified.

METHOD

Participants

A cross sectional descriptive study was conducted to examine the factors associated with problematic internet use. In the framework of this research, the problematic internet use term was preferred for any kinds of pathological or addictive online activities. The sample included 200 (37 %) male and 342 (63 %) female in total 542 undergraduate students. The mean age of the sample was 20.79 ± 1.73 with a range from 18 to 26 years. The socio-demographic features and online experiences of the students are shown in Table 1.

The data collection materials were distributed to the participants while they were in attendance of required course. The participants completed the questionnaires after the researchers had explained the purpose of the study. The consent of the participants was taken and their confidentiality was assured. All students were also ensured that they were free to refuse if they did not want to answer the questions.

Measures

The Sociodemographic Information Form: The basic information form was used to collect demographic information relating gender, age, having their own computer, the age of their first personal computer, the age of onset of connecting to internet, the frequency of computer use, the amount of hours spent, the time of the day they mostly use internet, and the reason for using internet.

Online Cognition Scale (OCS): The OCS is a 36-item questionnaire that measures problematic internet use. It was developed by Davis and adopted to the Turkish population by Ozcan and Buzlu (Davis, Flett, & Besser, 2002; Ozcan & Buzlu, 2005). This scale evaluates the problematic internet use and particularly focuses on cognitions rather than behaviors. It is also adapted from related measures of procrastination, depression, impulsivity and pathological gambling. The respondents rate agreeableness on a seven-points Likert scale. The OCS comprises four subscales: loneliness/depression, diminished impulse control, social comfort, and distraction. Additionally, the

OCS can be scored as the total measure of problematic internet use. As the scores of the scale rise, the problematic internet use behaviors increase (Davis et al., 2002).

In the current study, a high internal consistency was found, as a total measure of problematic internet use (α=0.97) and for each of the four subscales: social comfort (α= 0.93), loneliness/depression (α= 89), diminished impulse control (α= 0.88), and distraction (α= 0.86).

Procedures
The questionnaires were administered to the participants by lecturers while they were attending their compulsory course. The lecturers informed the participants about the questionnaires and gave the necessary directions.

Analysis
The relationship between the scores of OCS sub scales and frequency of internet use were investigated by computing the Pearson correlational analysis. The difference between means of OCS subscales according to gender was compared through t-test. The difference of OCS and subscales and subjective evaluation of academic performance, and weekly internet use hours were tested by computing one-way Anova. Chi –square was conducted to determine the relationships between the reasons of internet use and gender. SPSS 16.0 statistical software program was used for statistical analysis.

FINDINGS

The results of Socio-demographic Information Form and the Online Cognitive Scale are presented in Table 1. As a reminder, the proportion of females (63%) is higher than that of males (37%), the number of female participants were higher than males.

Of the whole sample, 71.8% reported that they had their own computer. Among these users, 38.9% stated they had used computer firstly at the ages of 5-15 years, whereas 32.5% had used it firstly at the age of 16-24. The results indicated that 74.6% of the students connecting to Internet firstly 5-15 years. The frequency of connecting to internet was 40.4% for occasionally, 39.9 for daily and 11.6% for every other day. Students were connecting to internet most often at the evening (62.4%). The reported hours of internet use at most were 0 to 9 per week.

Table 1: Socio-Demographic Features and Online Experiences of the Students

Variables (n=542)	**n**	**%**
Gender		
Female	342	63
Male	200	37
Academic performance		
Good	216	39,9
Average	287	53
Poor	32	5,9
missing	7	1,2
Having own computer		
Yes	389	71.8
No	151	27,8
missing	2	0,3
The age of first having a computer		
5-15	211	38,9
16-24	176	32,5
Not Stated	155	28,6

The age of onset of connecting to internet		
5-15	404	74.6
16-24	84	15,5
25 +	1	0,2
Not Stated	52	9,7
Frequency of computer use		
Never	6	0,1
Rarely	34	6,3
Occasionally	219	40,4
Every other day	63	11,6
Daily	216	39,9
Not stated	4	0,7
Weekly hours online		
0-9 hours	331	61,1
10-19 hours	95	17,5
20-29 hours	54	10
30-39 hours	23	4,2
40 and +hours	29	5,4
Not stated	10	1,8
The time of the day the most often use		
At morning	28	5,2
At noon	53	9,8
At evening	338	62,4
At night	37	6,8
Not stated	86	15,8
Reasons for internet use		
Connecting Facebook	107	19,7
Searching academic studies	104	19,2
Communicating with friends	47	8,7
Watching video or film	29	5,4
Connecting E-mail	26	4,8
Reading newspapers	21	3,9
Playing games	12	2,2
Using Twitter	3	0,6
Other	3	0,6
Not stated	190	35,1

The reasons of internet use were generally for social contact (communicating with friends, connecting Facebook and e-mail, and using twitter) and for searching academic studies. But a large part of the students (35.1%) did not report their reason of internet use. As a result of the bivariate analysis, a positive correlational coefficient was found between the frequency of internet use and the scores of total Online Cognition Scale and subscales ($r=.112$, 0.10; $p<.01$). It indicated that students who used internet frequently had higher OCS scores.

An independent sample t-test was conducted to determine the difference between the means of social comfort, loneliness/depression, diminish impulse control and distraction subscales of OCS and total scores of OCS according to gender. The results indicated that male students have significantly higher level of social comfort, loneliness/depression, diminish impulse control / distraction and problematic internet use than female students ($t=-3.78$, $p<0.0001$; $t=-3.31$, $p<0.001$; $t=-3.43$, $p<0.001$; $t=-3.15$, $p<0.02$; $t=-3.68$, $p<0.0001$; respectively).

In addition, the reasons of internet use were investigated according to gender. The female and male participants differed significantly on internet usage reasons (χ^2=20.365, p=0.000). The female students use internet for connecting friends with Facebook (54.6%), searching for academic studies (33.5%), watching video or films (7.3%), reading newspapers (3.7%), and playing games (.9%), whereas the male participants use internet for connecting with friends (49.2%), searching for academic studies (23.1%), reading newspaper (10.0%), playing games (10%), and watching video or films (7.7%).

The analysis revealed that there was a difference between the subjective evaluation of academic performance, and the total scores of OCS and subscales. The students who had evaluated their academic performance as poor ($\bar{x}$=35.81) use internet mostly for social contact in comparison with those who evaluated academic performance as good ($\bar{x}$=26.43). On the other hand, the average academic performance, as subjectively stated by the students, OCS subtest scores on loneliness/depression ($\bar{x}$=14.44), diminish impulse control ($\bar{x}$=25.27), distraction ($\bar{x}$=20.26), and problematic internet use ($\bar{x}$=92.51) higher than good academic performance ($\bar{x}$=11.35, $\bar{x}$=20.70, $\bar{x}$=17.11, $\bar{x}$=75.59; respectively).

In the analysis, the students who use internet less than 10 hours were evaluated as low risk group, the students whose internet use hours range from 10 to 29 hours were evaluated as average risk group, the students who use internet more than 30 hours were evaluated as high risk group. The results showed that there was a significant difference between weekly internet use hours and the total scores of OCS and except social comfort subscales (F=2.692, p=.069; F=4.932, p=.008; F=6.038, p=.003; F=5.674, p=.004; F=4.961, p=.007; respectively). The low risk group's mean score ($\bar{x}$=12.16), was lower than the average risk group's mean score ($\bar{x}$=14.47) with respect to loneliness/depression subscales. On the other hand, the low risk group's mean score ($\bar{x}$=21.76) was lower than high risk group mean scores ($\bar{x}$=27.57) in diminish impulse control. The low risk group's mean score ($\bar{x}$=17.77; $\bar{x}$=80.31) was lower than the average mean ($\bar{x}$=20.30; $\bar{x}$=91.68), and the high risk group's mean score ($\bar{x}$=21.96; $\bar{x}$=99.51) in both the distraction subscales and total score of online cognition scale.

DISCUSSION AND CONCLUSION

Discussion

This study primarily focused on exploring the internet usage behaviour and some demographic features of Turkish University students. Our results indicated that most of the students have begun to use the internet at an early age. Earlier exposure to the internet is a risk factor for students to have internet addiction (Ni et al., 2009). In addition, adolescents who use internet every day or more than 20 hours per week are at higher risk of internet addiction(Ko, Yen, Yen, Lin, & Yang, 2007).

The results revealed that the frequency of connecting to internet was occasionally (40.4%) and daily (39.9%) and the majority of the students use internet frequently. But, again it is seen that most of the students (61.1%) use internet average 0-9 hours per week. It can be interpreted that these students net-surfing activities are not addictive. On the other hand, of the whole sample, 9.6 % reported that they use internet 30 hours and over. It is important to highlight that even these students are using the internet only an average of 4.5 hours per day. If the students using internet for 40 hours and over are taken as risk group, they would be online an average of 5.7 hours per day. Although, there are some responsibilities like attending the courses, doing homework or project, other daily social activities and basic physical needs (sleep, eating, primary care) for the students, 5.7 hours and over are excessive time consumption spent in front of internet.

Furthermore, the students were connecting to internet most often at evening. Similar to this result, Ceyhan (2008) stated that connecting to internet most often at night is the predictor of the level of problematic internet use of the students. Night is long and free time, there is less responsibilities than daily activities. Students use a computer to spend the time instead of devoting to sleep at night or

having face to face relations with friends or relatives. Therefore, students who are online at night may use internet more problematically.

As the students' online activities increase, their success level will decrease. Therefore, the amount of being online a week and academic performance are taken together for evaluation. The results stated that average and high risk group has more problematic internet use than low risk group. Consistently with this finding, according to subjective evaluation of academic success, the average academic performance group experience high loneliness and depression, low impulse control, low level of attention and more problematic internet use. In contrast to high academic success group, low academic performance group uses internet as a tool of social comfort. The results were somewhat consistent with those of Morahan-Martin & Schumacher (2000) study of college students. Academic self-efficacy and academic procrastination can act as the predictors of problematic internet use among university students. This means that as problematic internet use rises, academic self-efficacy declines (Odacı, 2011).

When we look at the gender difference, the male students' internet use is more problematic than the female ones. Additionally, males who connected internet experienced more social comfort, loneliness, depression, low level of impulse control, distraction and total score of problematic internet use than females. According to the OCS results, males use internet to get social comfort. In parallel with this, it was found that the reason of internet use of male students was to get social contact, female students have the same reason for using internet and they also use internet for this purpose more than male ones. The rate of social contact is changing, but the order of reasons of internet use does not change. In this study, the OCS results and reasons for internet use were taken together, it can be stated that both gender reported the same reasons for internet use: connecting Facebook and e-mail, and using twitter. Social media can provide benefits to users by satisfying their personal, functional and social needs. Males and females are using social media for different reasons to satisfy their needs. For example, females tend to use social media more to communicate with friends while males may use social media for the product purchases and attain information, do sports and play game (Lim, Lim, & Heindrichs, 2014; Yeh, Ko, Wu, & Cheng, 2008).The other possible reasons may be when lack of social support, students have a higher tendency to explore online. There was another significant finding about the reason of internet use according to gender. Males use internet to play games more than females. Generally, playing games is a male interest. Therefore, males may be more prone to pathological use because they are more likely to use applications for internet games (Morahan-Martin et al., 2000). Also, males use the internet for downloading activities more frequently for longer duration than females (Teo, & Lim, 2000). Moreover, different studies suggest that the excessive use of social networks and the internet are related to propensity for depression, being less assertive, the impoverishment of social relationships, decreased academic performance (Vilca & Vallejos, 2015). As a reason of connecting to internet, males and females reported to make academic studies. But females use internet to search academic studies more than males. This finding can be related with academic performance. Females who use internet for academic studies (to scan resources for project or any academic knowledge acquisition) would have high academic performance.

Conclusion

In the light of results, this study suggests that problematic internet usage is not rare among Turkish university students. In addition, some psychological features like loneliness/depression, diminish impulse control, distraction and social comfort differentiate problematic internet user from others. In addition, some gender differences are obvious for problematic usage. Both genders internet usage aims are similar but males are more tend to internet use problematic than females. Poor academic achievement, evening internet usage and weekly hours of being online were important factors about problematic internet use. Identifying the protective and risk factors for problematic internet use in order to develop some preventive strategies has significant implications for young students' mental health. The internet use problem among university students should be intervened as early as

possible. Preventive efforts should be made to increase problem solving skills and providing alternative ways of socialization rather than internet use for the students.

But, there are some limitations in this study such as cross-sectional design, reliance on self-report measures and sample size. But the present study is the first step for a comprehensive research study about problematic internet use among the university students.

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